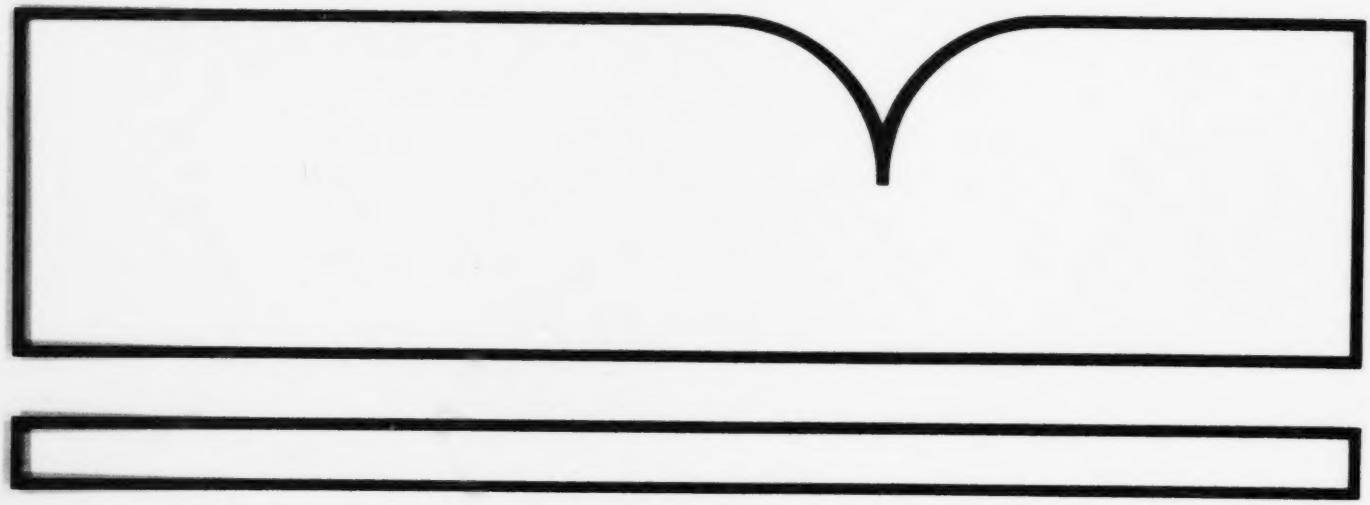
PB88-106521

Superfund Record of Decision (EPA Region 6)
Petro-Chemical Systems, Liberty County, Texas
March 1987. First Remedial Action

(U.S.) Environmental Protection Agency
Washington, DC

27 Mar 87



U.S. Department of Commerce
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Office of
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EPA/ROD/R06-87/018
March 1987

PB88-106521

EPA

Superfund Record of Decision:

Petro-Chemical Systems, TX

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16. ABSTRACT

The Petro-Chemical Systems site is a 296-acre tract of land located in Liberty County, Texas. It is in a sparsely populated area seven miles north of I-10 off Frontier Park Road. Waste oils were stored onsite prior to their use, in several pits on approximately four to six acres of the site. Records indicate that waste oils were spread on Frontier Park Road at the site as a method of dust control. In June 1970, all waste oil disposal operations were discontinued and in 1974, the site's commercial disposal facility permit was withdrawn. The Texas Water Commission (TWC) and EPA conducted preliminary investigations of the site in 1982 and 1984. Elevated concentrations of polyaromatic hydrocarbons (PAHs) were found in the former disposal pits. At the end of 1984, the site was placed on the NPL. The primary contaminants of concern include: VOCs, PAHs, benzene and napthalene. Benzene contamination was found up to a maximum concentration of 2100 ppm and napthalene up to a maximum concentration of 700 ppm. Contaminated media includes soil along Frontier Park Road.

The selected remedial alternative includes: excavating contaminated soil to below 100 ppm PAHs; disposing contaminated soils temporarily in a RCRA storage facility; constructing a road over the excavated areas and existing roadway; and relocating onsite residents temporarily during construction. The estimated capital cost for the remedial action is $1,232,785. Annual O&M costs are estimated to be $3,000 for the road and $1,750 for the leachate collection system.

17. KEY WORDS AND DOCUMENT ANALYSIS

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
ALLIED BANK TOWER AT FOUNTAIN PLACE
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DALLAS, TEXAS 75202

RECORD OF DECISION
Remedial Alternative Selection
Site: Petro-Chemical Systems, Inc., Phase I, Frontier Park Road

DOCUMENTS REVIEWED

I have reviewed the following documents describing the analysis of cost-effectiveness remedial alternatives for the Petro-Chemical Systems, Inc. site, Phase I- Frontier Park Road.

- Petro-Chemical Systems, Inc., Remedial Investigation/Feasibility Study (Lockwood, Andrews, and Newnam, November 1986);
- Responsiveness Summary;
- Staff Summaries and Recommendations.

DESCRIPTION OF SELECTED REMEDY

- Excavate contaminated soil to below 100 ppm Polyaromatic Hydrocarbons.
- Temporary disposal of contaminated soils in a RCRA storage facility.
- Construct a road over excavated areas and existing roadway.
- Temporarily relocate on-site residents during construction.

DECLARATION

Consistent with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Contingency Plan (40 CFR Part 300), I have determined that the selected remedy for the Petro-Chemical Systems, Inc., site is a cost-effective remedy, provides adequate protection of public health, welfare and the environment, and meets all applicable, relevant, and appropriate State and Federal regulations. The State of Texas has been consulted and agrees with the approved remedy. The activities associated with the temporary RCRA storage facility is an interim measure which is compatible with the long term remedy for the site. This remedial action will be conducted as an expedited response action under the auspices of the Emergency Response Branch.

I have also determined that the action being taken is appropriate when balanced against the availability of Trust Fund monies for use at other sites. In addition, excavation and on-site RCRA storage of contaminated soils with temporary relocation of residents is the most cost-effective remedial action, since it provides the best protection to human health, welfare, and the environment.

March 27, 1987
Date

Robert E. Layton Jr.
Robert E. Layton Jr., P.E.
Regional Administrator
Environmental Protection Agency
Region VI

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SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

PETRO-CHEMICAL SYSTEMS INC.,
LIBERTY, TEXAS

Record of Decision Remedial Alternative Selection

Petro-Chemical Systems, Inc., Phase I, Road
Liberty, Texas

Site Location and Description

The Petro-Chemical site is a 296-acre tract of land located in Liberty County. This site is south of Liberty, Texas, in a sparsley populated area approximately one mile east of FM 563 and seven miles north of I-10 (see Figure 1) off of Frontier Park Road. The Petro-Chemical site has often been called the Turtle Bayou site because of its proximity to Turtle Bayou, a tributary of the Trinity River.

The site was subdivided into smaller acre tracts ranging from 5-15 acres, in 1974. As many as 11 families have lived on the site since 1974; however, only two families remain as of August 1986.

The objective of this study and remedial action is Frontier Park Road, which lies within the site boundry. Records indicate that waste oils were spread on the road at the site as a method of dust control. This road is the only access to the various waste areas, as well as the only access for residents living there.

Site History

The Petro-Chemical Systems, Inc., site was originally discovered in 1970. The waste oils were stored prior to their use, in several pits on approximately 4 to 6 acres in the northwest corner of the site. All waste oil disposal operations were discontinued in June 1970. The State granted a commercial disposal facility permit to Petro-Chemical Systems in 1971, but the permit application was subsequently withdrawn in 1974.

Preliminary sampling conducting in 1982 and 1984 by the Texas Water Commission (TWC), formerly the Texas Department of Water Resources (TDWR) and the Environmental Protection Agency (EPA) indicated elevated concentrations of several polyaromatic hydrocarbons in the former disposal pits. The documentation of the presence of hazardous constituents on-site lead to the site being placed on the National Priority List in late 1984.

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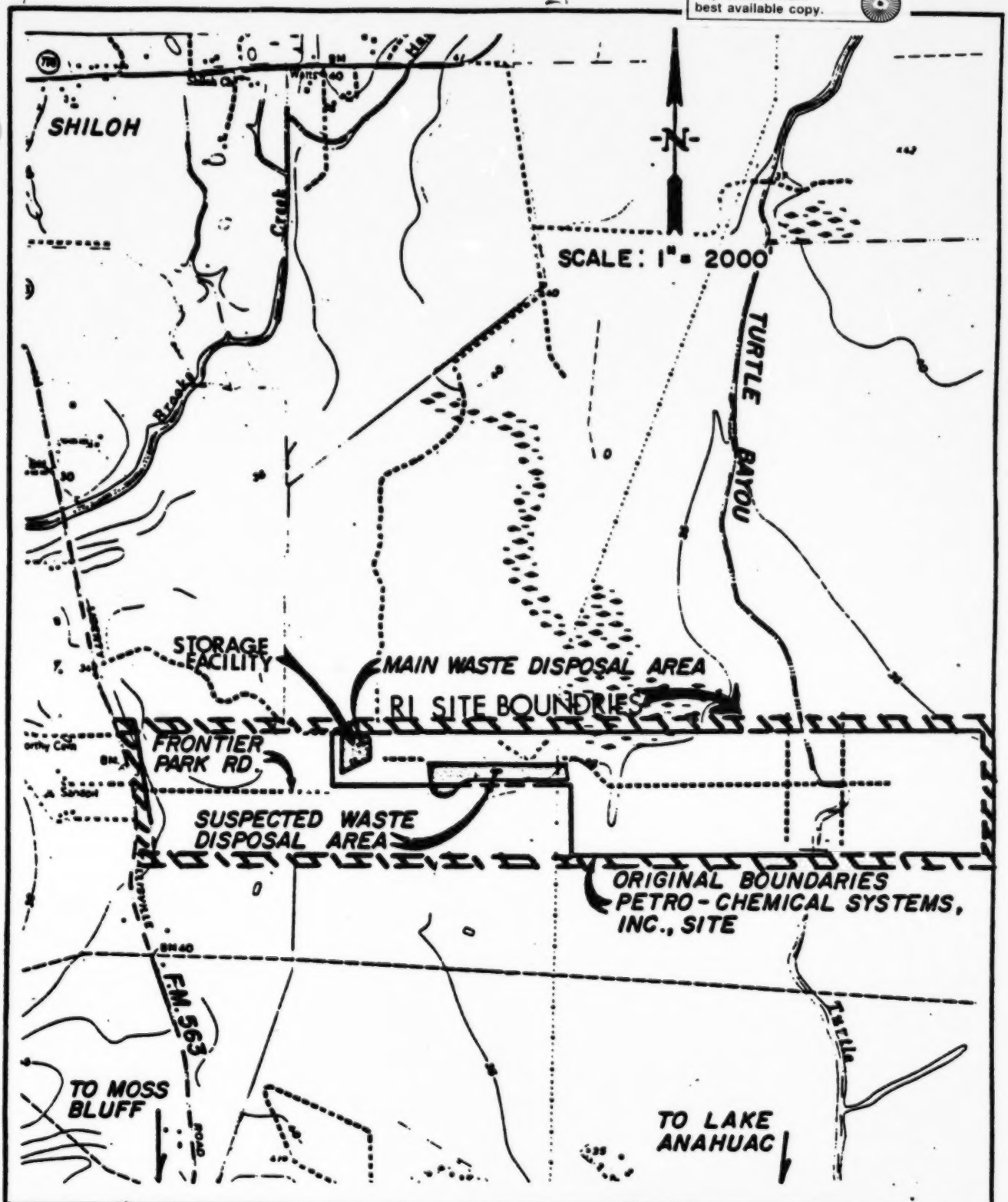

FIGURE 1 LOCATION MAP
FRONTIER PARK ROAD

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Prepared for:
TEXAS WATER COMMISSION

LAN / HLA

DATE: JAN. 1985 PROJECT NO. 1633-20-004-150

In March 1985, the TDWR contracted with Lockwood, Andrews and Newnam, Inc., in association with Harding Lawson Associates to conduct a remedial investigation and feasibility study for the Petro-Chemical Systems, Inc. hazardous waste site. Remedial investigation activities on the road were conducted in February and June 1986.

Following completion of the Remedial Investigation (RI) activities work began on the Feasibility Study (FS). The initial FS was received in October 1986 and the public review copy was received in November 1986.

Current Site Status

The Remedial Investigation Phase I road sampling efforts in February and June 1986, performed at the Petro-Chemical Inc., site, (Frontier Park Road) were used to describe the nature and extent of contamination.

Several areas of contamination have been identified on the road. About 4,000 cubic yards of highly contaminated soils were found over the first third of a mile of Frontier Park Road, and 22,000 cubic yards of moderately contaminated soils were found up to 2 miles along the road (Table 1). Highly contaminiated soils were defined as those with greater than 100 ppm polyaromatic hydrocarbons (PAH) or volatiles, and moderately contaminated soils are those between 10-100 ppm PAHs or volatiles. These criteria are based on a direct contact threat established by the Agency for Toxic Substances and Disease Registery.

Due to the volume of data generated during the sampling effort, two marker compounds were chosen to represent classes of compounds. Benzene and napthalene were the most prevalent contaminants in the samples collected along Frontier Park Road. Therefore, benzene was used to indicate the presence of other volatile contaminants found at the site and napthalene was used to indicate the presence of other base neutral contaminants (primarily PAHs). In general, the benzene contamination was found up to a maximum concentration of 2100 ppm and napthalene up to a maximum concentration of 700 ppm in the roadway.

The first 3600 feet of Frontier Park Road appears to be the most heavily contaminated with significant concentrations of volatiles and base neutral extractable compounds. Within the first 3600 feet, the length of road between 1200 and 1600 feet from FM 563 appears to be the most highly contaminated. Benzene and napthalene concentrations in this area were generally between 100 and 1000 ppm within the upper two feet of the roadway. In addition to the first 3600 feet, two more areas of Frontier Park Road appear to be significantly contaminated. Between 5500 feet and 6300 feet from FM 563, and between 9500 feet and 10,000 feet from FM 563, concentrations of individual contaminants ranged between 10 and 100 ppm.

TABLE 1

VOLUME OF MODERATELY CONTAMINATED AND HIGHLY CONTAMINATED SOILS AT THE FRONTIER PARK ROAD SITE

Distance from FM 563, FT.	Volume Greater Than 100 ppm, CY	Volume Between 100 ppm and 10 ppm, CY
0 to 1800	4,000	5,400
1800 to 3670	--	10,700
5200 to 6600	--	5,100
9600 to 10,060	--	960
TOTAL	4,000	22,100

Because the Frontier Park Road has significant quantities of contaminated soils at or near the surface and because provides the primary access to to persons living on the site, the risk of exposure to contaminants is high. Furthermore, access to the various waste areas throughout the site is limited as a result of the poor condition of the road. Because of these problems TWC and EPA decided to address the remedial investigation/ feasibility study activities relating to the road separate from the total site.

Migration Pathways

The contamination present in the Frontier Park Road soil samples could potentially be affecting groundwater and surface water quality in the immediate vicinity. However, issues involving these pathways for migration will be deferred to later investigation studies involving impacts from the total site.

Results of the remedial investigation indicate that during dry periods air quality has not been adversely affected by the contamination associated with the road. However, volatilization of these contaminants may be possible during wet weather when ruts caused by vehicular traffic serves to disturb the deeper buried waste.

Target Receptors

If contaminated soils are left in place, current and future residents of the area, as well as occasional travelers of Frontier Park Road, will be exposed to the contaminants contained in the road in a variety of ways. During wet weather periods, ruts in the road and mud from vehicular traffic significantly increase the potential for contact with contaminants. Because the road provides the only access to their homes, the on-site residents may potentially be exposed several times daily. During dry periods, vehicular traffic raises dust particles contaminated with PAHs and volatiles. Onsite residents may then be exposed through inhalation of dust particles. Dust particles may also be ingested or deposited on skin and other body tissues.

Enforcement Analysis

Four potentially responsible parties (PRPs) have been identified for the Petro-Chemical site. The PRPs include three landowners and one transporter of the waste.

An Administrative Order was issued to the PRPs for a removal action at the site. This removal action consisted of installing a fence around the main disposal area. The PRPs chose not to comply with this order and to date none of the PRPs has indicated any responsibility or willingness to fund any portion of the cleanup.

All identified PRPs will be offered the opportunity to voluntarily implement the preferred remedy. If anticipated negotiations are unsuccessful, the fund will be utilized for cleanup of the site. However, no negotiations have been initiated to date. If the PRPs decline to implement the remedy, EPA will seek appropriate enforcement action.

Alternatives Evaluation

The Feasibility Study for the Frontier Park Road was performed to determine what actions, if any, would be appropriate as part of a permanent remedy for the site. Several alternative remedial methods were developed to mitigate damage to, and provide adequate protection of public health, welfare, and the environment from past and future releases of contaminants on the road.

The National Contingency Plan (NCP), 40 CFR Part 300.68(c)(1) states that "Response actions may be separated into operable units consistent with achieving a permenent remedy. These operable units may include removal actions pursuant to 300.65(b) and/or remedial actions involving source controls, and/or management of migration." In accordance with the NCP, and based on the conclusions of the Remedial Investigation, a response action operable unit is necessary at the Petro-Chemical Systems, Inc., Phase I, Frontier Park Road.

The Remedial Investigation and Feasibility Study performed by Lockwood, Andrews, and Newnam, Inc., in November 1986, developed the following objectives and criteria based on the results of the Remedial Investigation:

- o Objective: Prevent direct contact with highly contaminated soils.

  Criterion: 100 ppm total polyaromatic hydrocarbons (PAH's), or 100 ppm Total Volatiles (TVs), (for the purpose of this study total volatiles will be defined as benzene, ethylbenzene, toluene, 2-butanone, 4-methyl, 2-pentanone, styrene, and xylene).

- o Objective: Minimize direct contact with moderately contaminated soils.

  Criterion: Between 10 and 100 ppm total PAH's or 10 and 100 ppm TVs.

- o Objective: Improve access to site for heavy equipment to facilitate remedial investigation sampling and monitoring and future remedial actions.

  Criterion: Meets or exceeds minimum Liberty County Road standards.

Initial Screening of Alternatives and Identification of Potential Remedial Technologies

Section 300.68(h) of the National Contingency Plan states that the following broad criteria should be used in the initial screening of alternatives and technologies:

1. Cost. For each alternative, the cost of installing or implementing the remedial action must be considered, including operation and maintenance costs. An alternative that far exceeds the costs of other alternatives and does not provide substantially greater public health or environmental benefits should usually be excluded from further consideration.

2. Effects of the Alternative. The effects of each alternative should be evaluated as to whether the alternative itself or its implementation has any adverse environmental effects, and whether the alternative is likely to effectively mitigate and minimize the threat of harm to public health, welfare or the environment. If an alternative has significant adverse effects, it should be excluded from further consideration.

3. Acceptable Engineering Practices. Alternatives must be feasible for the location and conditions of the release, applicable to the problem, and represent a reliable means of addressing the problem.

Identification of Response Actions and Applicable Technologies

In the screening process, only technologies applicable to the following response actions were considered:

1. Removing and disposing of highly contaminated soils;
2. Surface barrier over moderately contaminated soils and other portions of road to provide access; and
3. Temporary detour or temporary relocation.

Development of Site Remedial Alternatives

From the screening process seven alternatives plus the no-action alternative were retained and analyzed for mitigating the problems associated with the Frontier Park Road. The following is a description of each alternative and its respective cost.

Alternative 1: On-Site Storage with Relocation

Remove/excavate contaminated soil to below 100 ppm PAHs and/or TVs and dispose of them in an on-site RCRA storage facility. Backfill as necessary with natural soils. Construct a road so that access is provided to all areas of the site. Construct the road so that all soils on the road, contaminated with greater than 10 ppm PAHs and/or TVs are covered. Temporarily relocate on-site residents and maintain their property until their return. The cost of this alternative is $1,266,524.

Alternative 2: On-Site Storage with Detours

Remove/excavate contaminated soil to below 100 ppm PAHs and/or TVs and dispose of them in an on-site RCRA storage facility. Backfill as necessary with natural soils. Construct a road so that access is provided to all areas of the site. Construct the road so that all soils on the road, contaminated with greater than 10 ppm PAHs and/or TVs are covered. Provide temporary construction detours to allow on-site residents access to their property during remedial actions. The cost of this alternative is $1,489,106.

Alternative 3: Off-Site Disposal with Relocation

Remove/excavate contaminated soil to below 100 ppm PAHs and/or TVs and dispose of them in an off-site RCRA facility. Construct a road so that access is provided to all areas of the site. Construct the road so that all soils on the road, contaminated with greater than 10 ppm PAHs and/or TVs are covered. Temporarily relocate on-site residents and maintain their property until their return. The cost of this alternative is $3,353,162.

Alternative 4: Off-Site Disposal with Detours

Remove/excavate contaminated soil to below 100 ppm PAHs and/or TVs and dispose of them in an off-site RCRA facility. Construct a road so that access is provided to all areas of the site. Construct the road so that all soils on the road, contaminated with greater than 10 ppm PAHs and/or TVs are covered. Provide temporary construction detours to allow onsite residents access to their property during remedial actions. The cost of this alternative is $3,575,744.

Alterntive 5: Alternative Access

Provide temporary alternate access around portions of Frontier Park Road contaminated with greater than 100 ppm PAHs and/or TVs. Fence the perimeter of the contaminated areas to prevent access. Construct a road so that access is provided to all areas of the site. Construct the road so that all soils with greater than 10 ppm PAHs and/or TVs are covered. Provide temporary construction detours to allow on-site residents access to their property during remedial actions. Postpone further remedial action until remediation occurs at the remainder of the site. The cost of this alternative is $1,018,578.

Alternative 6: Remove to Background

Remove/excavate contaminated soils to background levels and dispose of them in an off-site RCRA facility. Backfill as necessary with natural soils. Construct a road so that access is provided to all areas of the site. Provide temporary construction detours to allow on-site residents access to their property during remedial actions. The cost of this alternative is $25,796,534.

Alternative 7: Construction of Surface Barrier

Construct a road so that access is provided to all areas of the site, and all contaminated soils on the road are covered by pavement. Provide temporary construction detours to allow on-site residents access to their property. The cost of this alternative is $1,039,451.

Alternative 8: No Action

Do nothing to remedy the contamination problem on the road. There is no cost associated with this alternative.

Detailed Analysis of Alternatives

Each one of the preceeding remedial alternatives was evaluated, and then, rated with respect to the following specific criteria.

- o Performance
- o Reliability
- o Engineering Implementability/Constructability
- o Environmental Impacts
- o Institutional Factors
- o Costs

Rating Symbol	Definition
--	Extremely negative effects, even with mitigating measures. Alternative not worth further consideration in this category.
-	Negative or moderately negative effects, but not strong enough to be sole justification for eliminating an alternative.
o	Has very little positive or negative effects, but inclusion can be justified for special reasons, or no change from existing conditions.
+	A positive or moderately positive benefit.
++	An extremely positive benefit.

Table 2 summarizes the results of this evaluation process.

Consistency with Other Environmental Laws

It is EPA policy to give primary consideration to remedial actions that attain or exceed applicable and relevant standards of other Federal and State public health and environmental laws. Environmental laws which will have an impact on the proposed remedies for the Petro-Chemical Systems, Inc., Phase I Frontier Park Road are summarized in Table 3. Provisions of the applicable and relevant or appropriate requirements of these laws are summarized in Table 4.

Recommended Alternative

Section 300.68(i) of the National Contingency Plan states that "the appropriate extent of remedy shall be determined by the lead agency's selection of a cost-effective remedial alternative that effectively mitigates and minimizes threats to and provides adequate protection of public health and welfare and the environment."

Alternative 1 is the recommended alternative for Petro-Chemical Systems, Inc., Phase I, Frontier Park Road. Costs for this alternative are summarized in Table 5. This alternative consists of:

- Excavation and removal of 4,000 cubic yards of highly contaminated soil. Backfill with clean soil.
- Temporarily store the contaminated soil onsite in a facility meeting RCRA requirements until permanent remedy is selected.
- Construct a road over excavated areas and existing roadway to provide access to site areas.
- Temporarily relocate on-site residents during excavation.

The rationale for selection of Alternative 1 is as follows:

Alternative 2 is essentially the same as Alternative 1, except that temporary detours would be constructed. The cost for providing temporary detours rather than temporary relocation is $225,000 more than Alternative 1. Also, by leaving people onsite during excavation there is a potential risk of exposure, which would be eliminated if they were relocated. Therefore, Alternative 2 was eliminated.

TABLE 2

COMPILATION OF NON-COST EVALUATION CRITERIA FOR
REMEDIAL ALTERNATIVES AT THE FRONTIER PARK ROAD SITE

valuation Criteria	On-Site Storage w/Reloc. 1	On-Site Storage w/Detour 2	Off-Site Disposal w/Reloc. 3	Off-Site Disposal w/Detour 4	Alternative Access 5	Removal to Background 6	Construction Surface Barrier 7	No Action 8
erformance								
Effectiveness	+	+	+	+	-	++	-	--
Useful Life	0	0	0	0	0	++	-	NA
eliability								
Operation/Maintenance	0	0	+	+	0	++	0	NA
Demon. Peformance	+	+	+	+	+	+	+	NA
mplementability								
Ease of Construction	0	0	0	0	-	-	+	NA
Time to Implement	++	++	++	++	+	++	++	NA
Time to Achieve Ben.	++	++	++	++	++	++	++	NA
ublic Health and Welfare								
Safety During Impl.	0	0	0	0	0	0	0	NA
Safety Upon Failure	+	+	+	+	0	++	0	NA
nvironmental-Short Term								
Site Pollution	0	0	0	0	++	0	+	NA
Site Alterations	+	+	+	+	0	0	0	NA
Construction Debris	+	-	+	-	-	-	-	NA
nvironmental-Long Term								
Site Pollution	0	0	0	0	-	++	0	-
Site Alterations	+	+	+	+	0	0	0	NA
nstitutional	+	+	+	+	-	+	-	--

TABLE 3

REMEDIAL ALTERNATIVE COMPLIANCE WITH APPLICABLE
OR RELEVANT AND APPROPRIATE REQUIREMENTS

Law or Regulation	Analysis	Remedial Alternative Number 1	2	3	4	5	6	7	8
Federal									
Resource Conservation and Recovery Act (RCRA)	Implementation of the source controls for this alternative will be consistent with current RCRA regulations, including standards for owners and operators of hazardous waste treatment, storage and disposal facilities and closure performance standards for facilities.	X	X	X	X		X		
Department of Transportation (DOT) Hazardous Materials Transport Rules	Implementation of this alternative does not specifically require the off-site transport of hazardous materials.	X	X			X		X	X
	Implementation of this alternative requires the off-site transport of hazardous materials. Transport will be in compliance with these rules, including use of properly constructed and marked transport vehicles, use of licensed transporter, and use of hazardous waste manifests.			X	X		X		
Clean Air Act (CAA) and National Ambient Air Quality Standards (NAAQS)	Implementation of this alternative may result in the emission of pollutants into the air. On-site personnel will be adequately protected.	X	X	X	X	X	X	X	

TABLE 3 (Continued)

REMEDIAL ALTERNATIVE COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Law or Regulation	Analysis	Remedial Alternative Number 1	2	3	4	5	6	7	8
Federal Water Quality Criteria (FWQC)	Implementation of this alternative should result in compliance with FWQC in groundwater.								
State									
Texas Solid Waste Act	Implementation of this alternative would require the transport and disposal of waste off-site. Transport and disposal will be in compliance with State requirements.			X	X		X		
Local									
Local Approvals	Local agency approval for implementing alternative may be required.	X	X	X	X	X	X	X	

TABLE 4

PROVISIONS OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

RCRA Part 264

Subpart B - General Facilities Standards

Requires that facilities located in the 100-year floodplain be designed, constructed, operated and maintained to prevent washout of any hazardous waste by a 100-year flood.

- Could be applied to any on-site landfill which would be constructed in the future to dispose of wastes.

Subpart E - Manifest system, recordkeeping, and reporting

- Hazardous waste manifesting procedures would be required if any waste is transported to an off-site TSD facility.

Subpart F - Groundwater Protection

- Requires that levels of hazardous constituents (40 CFR, Part 261 Appendix VIII) in the uppermost aquifer at the point of compliance (generally site boundary) meet limits set by U.S. EPA as:

  1) Background, or
  2) Maximum Contaminant Levels (MCLs), or
  3) An alternate concentration limit (ACL) posing no present or future hazard to human health or the environment.

- Will be fully addressed in Petro-Chemical Systems, Inc. Remedial Investigation and Feasibility Study.

Subpart G - Closure and Post-Closure

Requires closure in a manner that minimizes the need for further maintenance and prevents future release of contaminants.

- Could be applied to in-place capping of wastes or closure of any on-site landfills constructed as part of the remedial action.

TABLE 4 (Continued)

PROVISIONS OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Subpart N - Landfills

Requires that RCRA compliant landfills be double-lined and contain leachate collection and leak detection systems; does not allow placement of liquid, ignitable, or reactive wastes in landfill; also provides specific closure requirements.

- Could be applied to any on-site landfill which would be constructed in the future to dispose of wastes.

Occupational Safety and Health Standards: 29 CFR 1910

OSHA sets standards for protection of workers.

- Would be applied to site workers during any remedial action; some standards may be considered in developing safe exposure levels (in air for example) for near site residents.

Clean Air Act: 42 U.S.C. 7401

Regulates primary air pollutants; does not address volatile organics or most toxics in air.

- Application to site limited, possibly applies during remedial actions involving waste excavation.

D.O.T. Rules for the Transportation of Hazardous Materials: 49 CFR Parts 107, 171.11 - 171.500

Regulates the transport of hazardous wastes through licensing of qualified transporters.

Regulates hazardous waste manifesting system.

Regulates transport placarding.

TABLE 4 (Continued)

PROVISIONS OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

EPA Groundwater Protection Strategy

Ranks aquifers in the order to be protected:

Class I - sole source aquifer
Class II - usable aquifer, other supplies available
Class III - water unfit for consumption (due to high salt content for example), or aquifer has low yield.

- Deferred to Petro-Chemical Systems, Inc. Remedial Investigation and Feasibility Study.

Table 5 Estimated Capital Costs for Remedial Action
Cleanup Alternative 1 for Frontier Park Road

ALTERNATIVE 1 - On-site RCRA Storage Facility
with Temporary Relocation

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
1. Excavate Contaminated Soils and Transport to on-site RCRA Facility	4,800.00	CY	5.00	24,000.00
2. Backfill w/Natural Soils	4,800.00	CY	8.00	38,400.00
3. Construction of on-site RCRA Storage Facility				
a. Line Stabilized Subgrade	2,952.00	SY	3.20	9,446.40
b. Oiled Sand Pad	1,180.00	CY	8.00	9,440.00
c. 40 ml Synthetic Liner	30,625.00	SQ.FT	0.50	15,312.50
d. 12" Leak-Detection System				
i.)Sand	935.00	CY	8.00	7,480.00
ii.) 4" PVC Drain Pipe	2,934.00	LF	15.76	46,239.84
e. 40 ml Synthetic Liner	24,964.00	SQ.FT	0.50	12,482.00
f. 12" Leachate Collection Sys.				
i.)Sand	871.00	CY	8.00	6,968.00
ii.) 4" PVC Drain Pipe	2,320.00	LF	15.76	36,563.20
g. 40 ml Synthetic Liner	29,929.00	SQ.FT	0.50	14,964.50
h. 12" Clay Layer	1,280.00	CY	8.00	10,240.00
i. 6" Top Soil	658.00	CY	8.00	5,264.00
j. Seeding	29.00	MSF	19.25	558.25
k. Backfill Contaminated Soil	4,800.00	CY	8.00	38,400.00
4. Construction of Asphalt Road				
a. Earthwork (Ditches) - (11,100')(2)(7.5')(2.0')/27x1.2	14,800.00	CY	5.00	74,000.00
b. 6" Line Stabilized Subgrade	27,134.00	SY	1.60	43,414.40
c. 4.5" Limestone Base	27,134.00	SY	5.50	149,237.00
d. 2" Asphalt Top	24,667.00	SY	4.40	108,534.80
e. Seeding (Shoulders & Ditches)	433.00	MSF	19.25	8,335.25
5. Permanent Bayou Crossing	1,040.00	SQ.FT	38.00	39,520.00
6. Temporary Relocation (4 Families/16 People)				
a. Housing (4 units@$600/month)	6.00	MO	2400.00	14,400.00
b. Moving Expenses				
i.) In	4.00	EA	500.00	2,000.00
ii.) Out	4.00	EA	500.00	2,000.00
c. Maintenance and Security	6.00	MO	800.00	4,800.00
d. Misc. Extraordinary Exp.	6.00	MO	400.00	2,400.00

CONSTRUCTION SUB-TOTAL	724,400.14
OVERHEAD & PROFIT (10%)	72,440.01
TOTAL	796,840.15

Table 5 (continued)

A. CONSTRUCTION SUB-TOTAL + OVERHEAD & PROFIT	.....	796,840.15
B. BID CONTINGENCIES	.....	119,526.02
C. SLOPE CONTINGENCIES	.....	0.00
D. CONSTRUCTION TOTAL	.....	916,366.18
E. R.O.W AND EASEMENT ACQUISITION	.....	0.00
F. BONDING & INSURANCE	.....	91,636.62
G. SERVICES DURING CONSTRUCTION	.....	64,145.63
H. MISCELLANEOUS LAB TESTING, COMMUNITY RELATIONS,ETC.	.....	69,000.00
I. TOTAL IMPLEMENTATION COST	.....	1,141,148.43
J. ENGINEERING DESIGN	.....	91,636.62
K. TOTAL CAPITAL COST	.....	1,232,785.04
L. OPERATION AND MAINTENANCE PRESENT WORTH	.....	33,739.36
M. TOTAL PRESENT WORTH COST	.....	1,266,524.40

Alternative 3 and 4 were eliminated because transport and off-site disposal of soils increases the cost of this alternative to over 2 million dollars more than Alternative 1 with no increase in protection to human health and the environment. Furthermore, there is the risk of a transportation incident since the material would be removed off-site.

Alternative 5 and 8 were eliminated because the road would essentially remain the same as it is now. The road would persist in posing a risk to human and the environment, by continuing to threaten ground and surface water.

Alternative 6 was eliminated due to an additional 24 million dollars required to perform excavation to background and off-site disposal. Furthermore, this alternative does not meet the intent of the Superfund Amendments and Reauthorization Act of 1986 (SARA) which encourages permanent remedies versus land disposal with no treatment

Consequently, Alternative 1 complies with all applicable and relevant Federal and State environmental laws and regulations. Furthermore, Alternative 1 is the lowest cost remedy that mitigates short and long term threats to public health and the environment.

Operation and Maintenance

Operation and Maintenance will consist of surficial maintenance of the road once the construction is complete.

EPA will be responsible for operation and maintenance of the road through the Phase II, site remedial action, since the road will be used for access by heavy equipment. The State of Texas or Liberty County will assume responsibility for operation and maintenance of the road, commencing at the close of Phase II, site remedial action.

Annual operation and maintenance costs for the road are estimated to be $3,000.00.

Operation and maintenance will also be required for the onsite RCRA storage area. This will consist of maintaining and operating the leachate collection system.

EPA will consider the first years operation and maintenance of the leachate collection system as part of the remedial action. The State of Texas will assume full responsiblity for the operation and maintenance after this time. It is estimated that the system will be in operation for a 5 year period until such time that the site remedy can be implemented.

Annual operation and maintenance costs for the leachate collection system is estimated to be $1,750 and the present worth for 5 years is estimated to be $6,600.

Schedule

Approve Remedial Action	December 1986
Emergency Response Branch take-over for Design of Road	January 1987
Emergency Response Branch take-over for Construction of Road	January 1987
Agency coordination of Relocation with FEMA	January 1987

Community Relations

Public interest in Petro-Chemical Systems, Inc. was very high. Citizen involvement resulted in the relocation of a State permit in 1974. Public interest since that time has become moderate. In November, 1985, an informational meeting was held in Liberty, after the site was placed on the NPL. Approximately 30 people attended this meeting.

The public notice regarding the feasibility study and public meeting was released on October 29, 1986. This was followed by the public comment period which began November 12 and ended December 3. Approximately 45 people attended the public meeting held November 20, 1986, in Liberty.

There was no opposition to the temporary relocation effort and planned roadway excavation and construction. The citizens did express concern that the site might be used for future disposal of waste from other Superfund sites. They also expressed an opinion regarding the drainage problems in the area. Specific concerns and EPA's responses to all comments/questions are outlined in the "Community Relations Responsiveness Summary" attached to this Record of Decision.

Attachment A

Paul Hopkins, Chairman
Ralph Roming, Commissioner
John O. Houchins, Commissioner

Larry R. Soward, Executive Director
Mary Ann Hefner, Chief Clerk
James K. Rourke, Jr., General Counsel

December 19, 1986

Dr. Allyn M. Davis
Director, Hazardous Waste Management Division
U. S. Environmental Protection Agency
Region VI (6H)
1201 Elm Street
Dallas, Texas 75270

Re: Petro-Chemical Systems
Proposed Record of Decision

Dear Dr. Davis:

We have reviewed the proposed Record of Decision (ROD) for the Petro-Chemical Systems, Inc. Superfund Site. We have no objection to the selected remedy as described in the proposed ROD. The proposed remedy is excavation of the highly contaminated soil on the road with storage of the waste in an on-site RCRA facility. The road will be backfilled to grade and paved with asphalt.

Sincerely,

Larry R. Soward

Larry R. Soward
Executive Director

Attachment B

Petro-Chemical System, Inc.
Frontier Park Road
Liberty, Texas

Responsiveness Summary

This community relations responsiveness summary is divided into the following sections:

Section I. Overview - This section discusses EPA's alternatives for remedial action of the contamination on Frontier Park Road.

Section II. Background on Community Involvement and Concerns - This section provides a brief history of community interest and concerns raised during the remedial planning activities at the Petro-Chem site.

Section III. Summary of Comments Received during the Public Comment Period - The comments and/or questions received during the public comment period are summarized and EPA's responses are provided.

I. OVERVIEW

On November 12, 1986, EPA announced seven possible alternatives for corrective action for the Frontier Park Road and on November 20, 1986 a public meeting was held to discuss the 7 approaches and solicit comment. The alternatives under consideration were:

Onsite Storage - An estimated 4,000 cubic yards of highly contaminated soil would be excavated and stored in a temporary onsite facility that meets EPA and State standards. The excavated area would be backfilled with clean soil and a road would be constructed over existing roadway.

During the excavation the two families currently living on the site would be temporarily relocated or a temporary access road would be provided. The costs range from $1 - $1.3 million.

Offsite Disposal - The contaminated soils mentioned above would be excavated and taken to an offsite disposal facility. The area would be backfilled and a road constructed over existing roadway. Again, the residents would be relocated or a temporary access road would be provided. The costs range from $2.9 - $3 million.

Temporary Access - A temporary gravel road would be constructed through an uncontaminated area. The perimeter of the contaminated areas would be fenced to prevent access. The contaminated soil on the roadway would be addressed in the overall remedy for the site. The cost of this temporary measure is estimated at $700,000.

Total Removal - All soils contaminated above background levels would be excavated. Clean fill dirt would be added and a road constructed over existing roadway. A temporary road would be built for access during excavation. The estimated cost is $24 million.

Cover Contamination - All contaminated material on the road would be covered with gravel. A temporary road would be provided during construction. The cost is estimated at $900,000.

No Action - As required by federal regulations, EPA considered taking no action to remove or cover the contamination.

EPA's preferred remedial action for Frontier Park Road was excavation of the highly contaminated soils and storage of the soil in a temporary onsite facility. The residents would be temporarily relocated during the excavation. Judging from the comments received during the public comment period, the general public is not opposed to the proposed remedy. One family living at the site expressed the desire to be relocated if the relocation was short-term and if the drainage problems could be alleviated when the road is constructed. The other family living at the site expressed opposition to the relocation if the entire road was not going to be reconstructed.

II. BACKGROUND OF COMMUNITY INVOLVEMENT

The Petro-Chemical System, Inc. site was originally discovered in 1970 by the Texas Water Quality Board (now the Texas Water Commission). The records indicate that waste oils were spread on roads at the site as a dust abatement measure. In 1971, the owner filed an application for a commercial disposal permit for the 296-acre site. A permit was granted after a lengthy public hearing, but subsequent legal action and public opposition resulted in the permit being revoked. The original tract was subdivided into 5 to 15-acre tracts. As many as 11 families have lived on the site since 1974.

Interest in the site was renewed in 1981 and the State of Texas conducted a preliminary investigation of the site. In 1984, the State requested that the site be included on the National Priorities List.

Community interviews in December 1984 indicated that the primary concern was Frontier Park Road, drainage, and health problems associated with the contamination. In November 1985, the Texas Water Commission held a public meeting to discuss the status of the site. Thirty-six area residents attended.

II. SUMMARY OF PUBLIC COMMENTS

The press release announcing the public comment period and public meeting was issued on October 29, 1986. The comment period began on November 12 and ended December 3, 1986. The public meeting to outline the results of the Remedial Investigation and Feasibility Study was held November 20, 1986, in the Humphreys' Cultural Center in Liberty. Forty-three (43) people registered at the meeting and 6 people spoke. One letter with comments was received.

Comments/questions raised during the public comment period are summarized briefly:

Comment 1: What do you estimate for time of temporary relocation?

EPA Response: The feasibility report estimates that the relocation time would be six months. However, this is a conservative estimate, realistically it could be 4-5 months. This projection is based on starting the temporary relocation when the equipment moves in and returning the residents when the equipment moves out.

Comment 2: With the excavation and removal to an onsite disposal facility that meets state and federal requirements, what are the chances of wastes from other sites being brought to this facility in the future?

EPA Response: None, wastes from other sites will not be brought to the Petro-Chemical Systems, Inc., site for disposal.

Comment 3: How long will the waste be stored onsite?

EPA Respone: The projection is a period of 2-5 years, until total site remediation is accomplished.

Comment 4: What standards would be used for the construction of the road?

EPA Response: We would follow minimium county road specifications, which consist of the following:

a) eight inches of lime-stone sub-base
b) 4 1/2 inches of gravel
c) two inches of asphalt

Comment 5: Who would maintain the road after its finished?

EPA Response: EPA would maintain the road, through the total site remediation, since one of our objectives is to access other parts of the site. Long-term maintenance of the road will either be the State or the County's responsiblity.

Comment 6: What will happen if, during construciton, additional contamination is found?

EPA Response: We believe the road is sufficantly characterized and the extent of contamination is known. However, should the situation arise, provisions could be made to allow the residents effected access to their homes until construction activities resume.

Comment 7: What is the estimated date to start actual construction?

EPA Response: Money from the newly enacted Superfund Bill has yet to be appropriated, but we project money will be available some time in February. Actual construction is not expected to begin until mid-summer 1987.

Comment 8: How can a clean-up alternative be chosen if the extent of the contamination is not really known?

EPA Response: We are only proposing a remedy for the road at this time. All other aspects of this site, the actual disposal areas, groundwater and surface water will be thoroughly investigated under the total site remediation plan.

Comment 9: The road on the east side of the bayou is about 1700 feet long and is in as bad shape as the rest of the road. When the bayou crossing is built and only a limited area east of the bayou reconstructed, the crossing water will only find another spot to cross the road at a point just beyond the repairs. Therefore, we believe the entire road should be repaired.

EPA Response: There are two objectives that we are concerned with as far as the road remediation is concerned. Our proposed remedy meets these objectives, which are to prevent direct contact with the contaminated areas on the road and to provide access for the heavy to the many disposal areas. Since there are no waste disposal areas east of Turtle Bayou and no contamination was identifed along this portion of the road, it does not meet with the Agency's objectives to repair the east portion of the road.

Comment 10: The main waste pit is on my property. Am I in any danger?

EPA Response: You would only be in danger if you repeatedly came in direct contact with waste.

Comment 11: Who will pay for the clean-up of this site?

EPA Response: The responsible parties have been notified to indicate whether they want to participate in the clean-up. If they decline or there is no response, then the Agency will fund the clean-up and recoup the costs from the responsible parties in court.

Comment 12: How is it cheaper to build an onsite storage facility rather than take it away?

EPA Response: The Feasiblity Study was based on actual cost estimmates and it ascertained that it is indeed cheaper to build a temporary onsite storage facility, rather then transport the waste to an offsite facility.

Comment 13: How will the construction contracting be handled?

EPA Response: The road remediation could be handled as a TWC State lead project. The State would be responsible for hiring a prime contractor who would in turn hire any subcontractors needed to complete the construction. However, it is likely, that EPAs Emergency Response Branch will assume the design and construction of the road. Under the Emergency Program, one of the already approved prime contractors would be used to design and construct the road. However, these prime contractors have the authority to hire any subcontractors needed to complete the job.

Appendix 1

Attachment A

Community Relations Activities
Conducted Regarding
the Petro-Chemical Systems Site

Community relations activities conducted at the Petro-Chemical site to date include the following:

- o TWC conducted community interviews with local officials and interested residents in December 1984.
- o TWC finalized the community relations plan in August 1985.
- o Information repositories were established in Liberty at the Public Library and the County Courthouse and the TWC office in Austin.
- o TWC conducted a public meeting to explain the status of the site in November 1985. Thirty-six (36) people attended.
- o The Remedial Investigation and Feasibility Study concerning the road was released to the public for review and comment on November 12, 1986.
- o A pre-meeting briefing was held with the County Judge and County Commissioner on November 20. A pre-meeting briefing was also conducted with the two families currently living on the site.
- o EPA held a public meeting in the Humphreys' Cultural Center in Liberty to describe the results of the Remedial Investigation and Feasibility Study on Frontier Park Road. Fourty-three (43) people registered at the public meeting on November 20, 1986, 6 people spoke or asked questions.
- o The transcript of the public meeting was sent to the area repositories on December 3, 1986.
- o This Community Relations Responsiveness Summary was mailed to area repositories and all individuals who commented or asked question.